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mortality, available treatment options, as well as healthcare resource utilization and medical costs associated with pancreatic cancer. Critical analyses of study quality and data gaps were analyzed at the country level. **RESULTS:** A total of 328 studies were identified based on the keywords. Of these, 32 studies met the inclusion criteria. Studies indicate that pancreatic cancer has an extremely poor prognosis: for all stages combined, the 1- and 5-year relative survival rates are 25% and 6%, respectively. Pancreatic cancer is the fourth most common cause of cancer-related deaths in the United States and the eighth worldwide. More than 50% of patients come to clinical attention with metastatic disease, and an additional 30%–40% present with locally advanced tumors. Current treatments include surgery and palliative chemotherapy such as gemicitabine and gemcitabine/erlotinib combination. Recently nab-paxclitacel was approved based on a 1.8 month improvement in the overall survival. **CONCLUSIONS:** This systematic review shows that patients with pancreatic cancer have a very low survival rate. There is an urgent need for new treatments for these patients.

PCN54

SYSTEMATIC REVIEW OF EPIDEMIOLOGY AND BURDEN OF CUTANEOUS T-CELL LYMPHOMA

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OBJECTIVES: Cutaneous T-Cell Lymphoma (CTCL) is a rare and serious cancer with significant deterioration in patient quality of life. The objective of this research was to conduct a systematic review of epidemiology and the burden of CTCL. **METHODS:** A systematic literature search for epidemiology and the burden of disease studies was undertaken for the databases Pubmed, Embase, Biosis, Google Scholar and Cochrane. Data was collected for the study type, methods, country and key findings. Extracted study data included: CTCL incidence, complications, mortality, available treatment options, as well as healthcare resource utilization and medical costs associated with CTCL. Critical analyses of study quality and data gaps were analyzed at the country level. **RESULTS:** A total of 50 studies were identified based on the keywords. Of these, 14 studies met the inclusion criteria. Studies indicate that CTCL is a group of disorders characterized by localization of neoplastic T lymphocytes to the skin. Annual overall incidence of CTCL was 6.4 per million persons between 1973 and 2002. CTCLs accounted for 71%, with Mycosis fungoides (MF) and Sézary syndrome (SS) representing the most common sub-types (54 % of all CTCLs). CTCL is associated with a significant symptom burden. Pruritus appears to be one of the most prominent and disturbing symptoms. All aspects of QOL are affected in CTCL. Two new treatments were approved for CTCL during 2009-2012 (US), however, the unmet need remains high. **CONCLUSIONS:** This systematic review shows that patients with CTCL have a very poor prognosis and serious deterioration in quality of life. There is an urgent need for new treatments for these patients.

PCN55

RATES, TIMING, AND COSTS OF SHORT-TERM DISABILITY (STD) AND LONG-TERM DISABILITY (LTD) IN PATIENTS WITH NEWLY DIAGNOSED ADVANCED MELANOMA

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OBJECTIVES: Data on the association of disability with advanced melanoma are limited. This exploratory retrospective cohort study determined rates, timing, and costs of STD and LTD in adult patients with newly diagnosed advanced melanoma. **METHODS:** The sample was derived from US administrative claims databases (Truven Health MarketScan®). Disability costs were adjusted to 70% of an estimated $30/hour replaced wage. **RESULTS:** Between April 1, 2011, and December 31, 2012, 1,052 patients were diagnosed with advanced melanoma. Of these, 109 patients (mean age, 51.1 years; 92.7% employed full-time) had data eligibility, among whom 94 and 95 had STD or LTD eligibility, respectively. Fourteen and 9 patients went on STD or LTD, respectively; 2 went on both. Mean time between diagnosis and STD or LTD was 115.0 days and 221.8 days, respectively. Mean number of STD and LTD days were 67.2 and 105.7, respectively. Seven STD and 6 LTD patients received melanoma-specific treatment. Mean time between treatment initiation and STD or LTD was 59.4 and 202.5 days, respectively. Mean number of on-treatment days (time from treatment initiation until the run-out date, defined by the supply for oral/subcutaneous products or expected clinical benefit for infused products) was 16.4 during STD and 25.1 during LTD. Among STD and LTD patients with a return-to-work record (n=14 and n=5, respectively), mean time to work re-entry was 85.6 and 76.4 days. Mean costs to employers were similar for STD and LTD ($1,302/patient/month vs $1,349/patient/month). **CONCLUSIONS:** This study provides preliminary estimates of the course of work disability and associated costs in patients with newly diagnosed advanced melanoma. Melanoma often affects younger patients thus it is important to refine the estimated burden associated with lost work productivity in a larger sample with long-term follow up. Future research must also explore the impact of recently introduced melanoma therapies on this burden.

PCN56

REVIEW OF DISEASE BURDEN OF LUNG CANCER IN CHINA'S BEIJING AND SHANGHAI

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OBJECTIVES: Lung cancer has now become NO.1 disease of all cancers in both incidence and mortality in China. Since lung cancer imposes great disease and economic burden on patients in China, lots of studies have investigated national status of disease burden of lung cancer. However, few studies pay attention to disease burden of lung cancer in China's super big cities, such as Beijing &Shanghai. Our study aims to review lung cancer's burden in Beijing and Shanghai to inform policy making. **METHODS:** A comprehensive literature review of disease burden of lung cancer in Beijing Shanghai was conducted. "CNKI" and "Wanfang data", the biggest databases for Chinese journals, were searched through to Dec. 31th, 2014. **RESULTS:** In 2010, incidence and mortality of lung cancer in China are 46.08/105 and 37.00/105. DALYs (disability adjusted life years) and economic burden of lung cancer are extremely high in both Beijing and Shanghai. DALYs of lung cancer are 42219.38 and 91962.18 in Beijing and Shanghai respectively. And average hospitalization expenditures per lung cancer inpatient are ¥38595.00 and ¥50026.65, among which average drug costs per inpatient are as high as ¥18139.65(46.97%) and ¥30356.00(60.68%). **CONCLUSIONS:** Lung cancer has made Chinese patients incur great loss in both DALYs and money, which is a conspicuous reminder to policy makers to pay more attention to management of the raging disease. And early prevention and screening of lung cancer should be priorities to slow increasing speed of disease burden.

PCN57

ACCESS OF ORAL CHEMOTHERAPY FOR NON-SMALL CELL LUNG CANCER (NSCLC) IN FIRST LINE TREATMENT IN BRAZIL: IMPACT TO THE PATTERNS OF CARE AND COST OF ILLNESS

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OBJECTIVES: Previous real world data from 2013 showed the patterns of care of first-line NSCLC treatment in the Brazilian supplementary health system: carboplatin with pemetrexed (29.7%), bevacizumab containing regimens (20.8%) and oral chemotherapy (6%). The same study reported the average cost of management of this patients as 19.001,79USD. However, treatment patterns and cost of illness may have changed after enacting of a federal law (number 12880/2013) that has established the mandatory coverage of oral chemotherapy by the supplementary system. Therefore, the aim of this analysis was to evaluate the impact of oral chemotherapy incorporation in the patterns of care and cost of illness of first-line NSCLC treatment in Brazil. **METHODS:** All metastatic NSCLC patients receiving first-line treatment during 2014 were eligible and retrieved from the private market administrative claims database (Evidencias- Kantar Health database). Patterns of care were evaluated and compared before and after introduction of law 12880/2013. The cost of illness was calculated by a bottom-up approach. Exams, fees, and associated drugs reported were also considered for costing and values were derived from Tables Simpro and CBHPM. Exchange rate used was 1.00USD = 2.20BRL. **RESULTS:** We studied 110 patients with first-line NSCLC and found 19 different chemotherapy regimens. We observed few changes in the patterns of care: carboplatin with premetrexed is still the most used (32,7%), followed now by carboplatin with paclitaxel (19,1%) and bevacizumab containing regimen (16,4%). Oral chemotherapy represented 9,1% of the regimens. Costs of schemes ranged from 4,963.75USD to 52,374.55USD and the calculated average cost of management of one patient is 23,725.76USD. Additionally, there was a significant increase in the number PET CT required, from 28% in 2013 to 48% in 2014. **CONCLUSIONS:** We observed a low impact of oral chemotherapy incorporation in the patterns of care and cost of illness of first-line NSCLC treatment.

PCN58

HEALTHCARE UTILIZATION AND COSTS ASSOCIATED WITH MULTIPLE SWITCHING OF TYROSINE KINASE INHIBITOR THERAPY IN PATIENTS WITH CHRONIC MYELOID LEUKEMIA

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OBJECTIVES: Tyrosine kinase inhibitors (TKIs) represent the standard therapy to manage chronic myeloid leukemia (CML) and have resulted in a greatly reduced mortality rate. However, up to 40% of patients experience first-line failure, with many patients experiencing second-line. This analysis examined healthcare utilization and costs for CML patients that switched to a third-line TKI after having failed both first- and second-line TKI therapy. **METHODS:** Patients with a CML diagnosis during 1/1/2010-7/31/2014 and a subsequent claim data for a first-, second-, and third-line TKI were identified from the Truven Health MarketScan® Research Databases. Inclusion criteria: ≥18 years, continuous enrollment from 3 months prior to 6 months post first TKI treatment, no stem cell transplant, and switched to second- and third-line TKIs. Healthcare utilization and costs were calculated on a per-month basis between (1) initiation of first-line TKI until the switch to second-line TKI and (2) between second-line TKI initiation until the switch to third-line TKI. Nonparamtreic tests were used to test for differences. **RESULTS:** 137 patients were identified (male=532%; female=46.8%; mean age=57.34 years). Average duration of first-line TKI therapy was 301.62 days and 269.36.9 days for second-line. Although there were large differences among patients, overall, the number of monthly outpatient visits was higher ($p<.05$) during second-line therapy (mean=10.51; SD=12.32) relative to first-line therapy (mean=9.48; SD=11.37). There were no significant differences in monthly emergency room visits or hospitalizations. Healthcare costs were higher ($p<.05$) during second-line therapy than first-line therapy averaging $19,764 vs. $13,283 respectively. **CONCLUSIONS:** Experiencing treatment failure and switching to a second- and third-line TKI represents disruption in therapy and was associated with substantial healthcare utilization and economic burden for patients with CML. This was especially more costly and burdensome for patients who failed the second-line TKI therapy, as multiple TKI switches were associated with a greater number of outpatient visits and higher healthcare costs.

PCN59

DIRECT MEDICAL COSTS OF HER2 POSITIVE BREAST CANCER MANAGEMENT IN IRAN: A CLAIMS DATABASE AND DATA MINING ANALYSIS

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OBJECTIVES: HER2 positive breast cancer management can be costly when a monoclonal antibody treatment like trastuzumab is used. This is particularly problematic in middle-income countries with a national health insurance system , which have

to contemplate The question how innovative technologies can be financed is there even more pronounced. We estimated the direct medical costs of breast cancer treatment in Iran in the period of 21/03/2011-20/03/2014 and examined the fraction of total costs related to trastuzumab use. **METHODS:** A retrospective claims database analysis was performed using data from the Iran Social Security Organization, a health insurer which covers approximately 50% of the Iranian population. Data mining techniques helped to identify patients and determine resource use in the three stages of breast cancer (early, loco-recurrence and advanced). Using a healthcare perspective, absolute and relative costs of various medical services associated with treatment of HER2-positive breast cancer among Iranian women in both public and private healthcare systems were calculated. **RESULTS:** The patient population comprised 1295 women (mean (SD) age: 45.6 (10.3) years) and mean follow-up was 739 days (range:21-1072). Average costs of drugs and chemotherapy in early, loco-recurrence and advanced stages were €2,707 (range:€98-€23,680), €2,751 (€31-€23,420) and €13,030 (€115-€45,833), respectively. Average costs of radiotherapy and diagnostic tests were €2,138 (€5-€49,534), €516 (€2-€9,064) and €507 (€6-€17,125). Trastuzumab accounted for the largest share of total costs (58%), followed by paraclinical services (12%), radiotherapy (10%), and other drugs and chemotherapy (9%). **CONCLUSIONS:** Trastuzumab is an expensive drug may which require a substantial share of available budgets. These cost estimates can be included in cost-effectiveness analyses to determine if these costs are justified from a health economic view. Moreover, if relevant data are available, data mining techniques can support real-world cost-effectiveness analyses in middle-income countries and thereby help to optimize reimbursement decisions.

PCN60

A COST-EFFECTIVENESS ANALYSIS OF A BIOMARKER TEST COMPARED TO STANDARD OF CARE SURVEILLANCE IN PATIENTS WITH BARRETT'S ESOPHAGUS

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OBJECTIVES: An estimated 17 million people in the US have Barrett's Esophagus (BE), a precursor to esophageal cancer (EAC). The low probability of progressing to EAC (less than 2%) and the inability of standard histopathology to risk stratify BE patients have resulted in inefficient surveillance protocols and calls for effective innovation to identify higher risk patients. A newly-developed biomarker test can risk stratify BE patients for progression to high grade dysplasia (HGD) and EAC. The test stratifies patients into high, medium and low risk categories, giving providers actionable information for BE endoscopy surveillance frequency and treatment decisions such as radiofrequency ablation (RFA). This study evaluates the cost-effectiveness of this new biomarker test compared with the current standard of care (SOC) surveillance and treatment of BE. **METHODS:** Decision analysis with Markov modeling and cohort simulation were used to model treatment costs and outcomes from a health plan perspective. Costs were derived from Geisinger Health Plan claims data and quality-adjusted life-years (QALYs) from the medical literature. The model includes realistic assumptions for physician adherence to SOC for patients in each risk category. **RESULTS:** Preliminary results of a 5 year model of using the new biomarker test compared to SOC include an incremental cost-effectiveness ratio of $75,804 in U.S. 2012 dollars. Cumulative endoscopies in the biomarker test arm were 6.23% greater than with SOC and there were 73.3% fewer cumulative RFAs under SOC than with the biomarker test. Compared with SOC, the number of patients in the HGD, EAC, and death states in the biomarker test arm were 52.5%, 60.9% and 9.83% fewer, respectively. **CONCLUSIONS:** Using this new biomarker test to risk stratify BE patients is cost-effective at the $100,000 threshold and, due to more effective surveillance and treatment protocols, results in fewer patients transitioning to HGD, EAC, and death.

PCN61

ASSESSING THE ECONOMIC BURDEN OF U.S. MEDICARE PATIENTS DIAGNOSED WITH NON-HODGKIN'S LYMPHOMA

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OBJECTIVES: To evaluate the health care resource utilization and economic burden of non-Hodgkin's lymphoma (NHL) in the U.S. Medicare population. **METHODS:** NHL patients were identified (International Classification of Diseases, 9th Revision, Clinical Modification [ICD-9-CM] diagnosis codes 200.xx and 202.xx) using national U.S. Medicare claims from January 1, 2009 through December 31, 2011. The first diagnosis date was designated as the index date for the NHL cohort. Control patients of the same age, region, gender and index year were identified and matched to case patients based on baseline Charlson Comorbidity Index (CCI) scores, and were assigned a randomly chosen index date to minimize selection bias. Patients were required to have continuous medical and pharmacy benefits 1 year pre- and post-index date. Study outcomes, including health care costs and utilizations, were compared between the disease and comparison cohorts using 1:1 propensity score matching (PSM). **RESULTS:** A total of 20,254 patients were included in the NHL and comparison cohorts. After 1:1 PSM, 4,705 patients were matched from each cohort and baseline characteristics were balanced. Patients diagnosed with NHL were more likely to utilize health care resources including Medicare carrier (99.0% vs. 70.5%), Durable Medical Equipment (DME, 28.1% vs. 17.7%), Home Health Agency (HHA, 11.4% vs. 4.8%), outpatient visits (80.2% vs. 41.0%), inpatient stays (25.7% vs. 7.4%) and Skilled Nursing Facility (SNF, 4.8% vs. 1.7%) and hospice admissions (0.9% vs. 0.3%). Patients diagnosed with NHL also incurred higher Medicare carrier ($10,603 vs. $1,522), DME ($264 vs. $120), HHA ($531 vs. $270), outpatient ($30,013 vs. $4,268), inpatient ($5,762 vs. $1,167), SNF ($875 vs. $307), hospice ($197 vs. $67), pharmacy ($1,050 vs. $785) and total costs ($49,296 vs. $8,507; p<0.005). **CONCLUSIONS:** The economic burden and health care resource utilizations were significantly higher for patients diagnosed with NHL compared to patients without NHL.

PCN62

ASSESSING THE ECONOMIC BURDEN AND HEALTH CARE RESOURCE UTILIZATIONS OF U.S. MEDICARE PATIENTS WITH MYELOPROLIFERATIVE NEOPLASMS

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OBJECTIVES: To examine the economic burden and health care resource utilization of myeloproliferative neoplasms (MPNs) in the U.S. Medicare population. **METHODS:** A retrospective data analysis was performed using the U.S. national Medicare claims from January 2008 through December 2012. MPN patients were identified using International Classification of Disease 9th Revision Clinical Modification (ICD-9-CM) diagnosis codes 238.4, 238.71, 238.76 and 289.83. The diagnosis date was designated as the index date. A comparison cohort without a MPN diagnosis was created for patients of the same age, region, gender, index year and baseline Charlson Comorbidity Index score. A random index date was chosen for the comparison cohort to reduce selection bias. Patients were required to have continuous medical and pharmacy benefits 1 year pre- and post-index date. One-to-one propensity score matching (PSM) was performed to compare follow-up health care costs and utilizations between the cohorts, adjusting for demographic and clinical characteristics. **RESULTS:** Eligible patients (N=17,950) were identified for the MPN and comparison cohorts. After 1:1 PSM, a total of 5,546 patients were matched from each cohort and baseline characteristics were well-balanced. MPN patients had a higher percentage of health care resource utilizations, including Medicare carrier (98.6% vs. 65.9%), Durable Medical Equipment (DME; 29.5% vs. 14.4%), Home Health Agency (HHA; 12.4% vs. 5.0%), outpatient visits (76.6% vs. 37.4%), inpatient hospitalizations (27.2% vs. 6.8%) and Skilled Nursing Facility (SNF; 7.5% vs. 2.0%) visits than non-MPN patients. Patients diagnosed with MPNs also incurred significantly higher costs, including Medicare carrier ($3,872 vs. $1,283), DME ($266 vs. $91), HHA ($639 vs. $250), outpatient ($10,061 vs. $3,204), inpatient ($5,449 vs. $1,054), pharmacy ($1,069 vs. $713) and total health care costs ($23,060 vs. $7,076; p<0.0001). **CONCLUSIONS:** MPN patients had a higher burden of illness compared to non-MPN patients.

PCN63

SYSTEMATIC LITERATURE REVIEW OF COST OF ADVERSE EVENTS IN CANCER TREATMENTS IN THE US

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OBJECTIVES: Drug toxicities and adverse events (AE) during cancer treatment present a significant economic burden to health systems. Post 2007 there has been no systematic review summarizing the costs of AEs related to chemotherapy. Hence, the objective of this study is to provide an updated understanding of the cost of AEs in cancer treatments in the US. **METHODS:** A systematic literature search was conducted using PubMed. Selection criteria included studies published in the English language between January 2008 and October 2013, evaluating the cost of following AEs: neutropenia, thrombocytopenia, vomiting, nausea, peripheral neuropathy, sepsis, diarrhea and fatigue/asthenia, due to cancer treatment in the US. Costs were extracted for case and control cohorts (if available) and the cost difference between the cohorts was calculated to provide the additional cost due to the AEs. This difference in costs was then adjusted to 2013 USD. **RESULTS:** A total of 893 abstracts were screened, of which 15 unique studies were included. The distribution of studies reporting the selected AEs were: neutropenia (n=5), thrombocytopenia (n=3), vomiting (n=1), nausea/vomiting (n=4), peripheral neuropathy (n=1), sepsis (n=2), diarrhea (n=1) and fatigue/asthenia (n=1). The studies reported inpatient, outpatient, or total healthcare costs, with different units including per patient, per-patient per-year (PPPY), per event or per episode. AE costs varied vastly; the per event cost ranged from $213 (outpatient) to $6,000 (inpatient) while the PPPY cost ranged from $9,800 (outpatient) to $21,000 (total healthcare costs). **CONCLUSIONS:** AEs commonly encountered in cancer treatment remain an expensive problem despite medical advances. In addition to the high cost of cancer treatment, the cost of managing AEs adds to the economic burden on patients, Payers, and society. This study highlights that the cost of AEs associated with cancer treatments are consistently high and consume a large portion of healthcare resources.

PCN64

PERCEPTIONS OF BIOSIMILAR MONOCLONAL ANTIBODIES AMONGST EU5 BUDGET HOLDERS

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OBJECTIVES: Branded biologics will soon begin to face competition from incoming biosimilar monoclonal antibodies (mAbs), with many currently in development. Given the transition many markets are making towards becoming increasingly cost conscious, we sought to investigate how budget holders across the most important European markets perceived the incoming oncology biosimilar mAbs. **METHODS:** The research was conducted through in-depth interviews and focus groups with budget holders and clinicians across the EU5. **RESULTS:** All respondents had previous experience evaluating and making decisions on small molecule biosimilars (e.g. filgrastim, EPO). However, there was a lack of experience and knowledge amongst EU5 budget holders with biosimilar mAbs and they were unsure how or by whom they were going to be educated. The originator product was preferred in all attributes tested while costs were cited as the most important driver for encouraging adoption of biosimilar mAbs. Additionally, budget holders across the EU5 were adamant about encouraging automatic substitution (albeit, initially only for new patients), of the originator until enough experience was built up (at least 12 months, 24 months likely). Respondents also suggested that key institutions or regions will make decisions early on while other less resourced centres/regions will adopt their decision. Conversely, clinicians were apprehensive of biosimilar mAbs and anticipate resisting